(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 9 June 2005 (09.06.2005)

(10) International Publication Number WO 2005/052386 A3

(51) International Patent Classification: F16B 39/36 (2006.01) F16B 35/00 (2006.01)

(21) International Application Number:

PCT/US2004/037452

(22) International Filing Date:

9 November 2004 (09.11.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/523,435

19 November 2003 (19.11.2003) US

(71) Applicant (for all designated States except US): ALPHA STAMPING COMPANY [US/US]; 33375 Glendale Avenue, Livonia, MI 48150-1657 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): DOWNEY, Gerald, P. [US/US]; 40176 Spitz Dr., Sterling Hts., MI 48313 (US).

(74) Agent: ROBERT, C., Collins; Reising, Ethington, Barnes, Kisselle, P.C., P.O. Box 4390, Troy, MI 48099 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

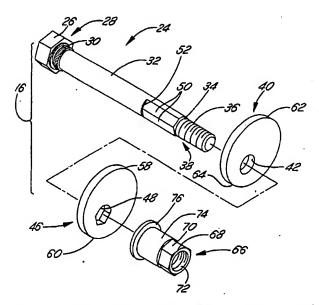
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 29 June 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: FASTENER ASSEMBLY



(57) Abstract: A fastener assembly adapted for providing adjustment between at least two members. A bolt includes a head, a shank axially extending from the head, and a circumferentially uninterrupted threaded portion axially extending from the shank. A first cam washer is fixed against rotation to the shank of the bolt in a position that in adjacent with respect to the head of the bolt. A second cam washer is fixed against rotation to the shank of the bolt in a position that is adjacent with respect to the threaded portion of the bolt. A threaded portion of a nut is threaded to the threaded portion of the bolt, and a skirt portion of the nut displaces the second cam washer as the nut is torqued down on the bolt.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/37452

A. CLASSIFICATION OF SUBJECT MATTER IPC: (%) F16B 39/36(2006.01);F16B 35/00(2006.01)					
USPC: 411/169,935.1,272,273,87,389 According to International Patent Classification (IPC) or to both national classification and IPC					
B. FIELD	OS SEARCHED	·			
U.S. : 41	rumentation searched (classification system followed by 1/169, 935.1, 272, 273, 87, 389				
Documentation	on searched other than minimum documentation to the e	extent that such documents are included in	the fields searched		
USPGPUBS,	ta base consulted during the international search (name DERWENT, EPO, JPO	of data base and, where practicable, searc	h terms used)		
C. DOCI	JMENTS CONSIDERED TO BE RELEVANT		T		
Category *	Citation of document, with indication, where ap		Relevant to claim No.		
X 	US 5,580,201 A (BRILMYER) 3 Dec 1996 (03.12.19	996), whole document, esp. Figs 1-6	1-3, 5-9, 14-17, 19-22, 27-29, 31-34, 39		
Y		:	4, 10-13, 18, 23-26, 30, 35-38		
A	US 3,006,443 A (SILER) 31 Oct 1961 (31.10.1961),	whole document.	1-39		
A	US 6,382,645 A (GRAVELLE et al.) 07 May 2002 (07.05.2002), whole document.		1-37		
A	US 6,302,416 A (SCHMACK) 16 Oct 2001 (16.10.2001), whole document.		1-39		
A	US 2004/0090030 A1 (GENICK, II) 13 May 2004 (13.05.2004), whole document.		1-39		
-			<u> </u>		
Further	documents are listed in the continuation of Box C.	See patent family annex.			
	pecial categories of cited documents:	"T" later document published after the integrated and not in conflict with the application principle or theory underlying the investment."	cation but cited to understand the		
"A" document defining the general state of the art which is not considered to be of particular relevance		"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step			
"E" earlier application or patent published on or after the international filing date considered novel or cannot be considered to involve an inventive when the document is taken alone "L" document which may throw doubts on priority claim(s) or which is cited to					
"L" document which may throw doubts on priority claim(s) of which is clied to establish the publication date of another citation or other special reason (as specified)		"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being			
"O" document	t referring to an oral disclosure, use, exhibition or other means	obvious to a person skilled in the art			
"P" document published prior to the international filing date but later than the priority date claimed		"&" document member of the same patent family			
	ctual completion of the international search	Date of mailing of the international sea	ph report		
03 April 2006 (03.04.2006) Name and mailing address of the ISA/US Authorized officer O (2) Usermuth Jan					
Ma	il Stop PCT, Attn: ISA/US	Katherine W. Mitchell			
	mmissioner for Patents D. Box 1450	U			
P.O. Box 1430 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201 Telephone No. 571-272-5150					

Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No. PCT/US04/37452

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
A	US 2005/0001397 A1 (GENICK, II) 06 Jan. 2005 (06.01.2005), whole document.	1-39
A	GB 2,116,279 A (MANNERS-SMITH) 21 Sept. 1983 (21.09.1983), whole document.	1-39
	05 2,110,277 11 (1.2.21.21.21.21.21.21.21.21.21.21.21.21.	
	+	
		·
	**	

Form PCT/ISA/210 (continuation of second sheet) (April 2005)